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Road Traffic Injuries: Children and their Parental Perspectives towards Emergency Medical Care

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Abstract

Road traffic injuries are a major global public health concern and a leading cause of death and disability among children and adolescents, particularly those aged five to fourteen years who are more vulnerable due to increased exposure to road hazards and limited understanding of traffic safety. This qualitative case study aimed to explore the experiences and perceptions of school children injured in road traffic accidents and to examine their health-seeking behaviors following the incidents. The study was conducted in Butwal Sub-Metropolitan City, Rupandehi District, Nepal, focusing on cases reported during the fiscal year 2078/2079. Participants included five injured school children and their parents. Data were collected through in-depth interviews with children, semi-structured interviews with parents and the participants' hospital treatment documents and they were analyzed thematically using Flyvbjerg (2011) seven-step framework. Findings exposed critical gaps in the quality of emergency care in government hospitals, such as inadequate staff training and lack of child friendly environments. In contrast, private hospitals were perceived as offering better care due to superior facilities and resource availability, despite higher costs. The study underlines the crucial need to strengthen emergency healthcare services, improve pre-hospital care, ensure equitable access to treatment and foster public private collaboration

Introduction

Road traffic injuries (RTIs) are a leading cause of injury related deaths and long term infirmities among children and adolescents worldwide, particularly in low and middle income countries (LMICs) (Kassebaum et al., 2017). Children aged five to fourteen years are especially vulnerable since they often lack the cognitive maturity to safely cross complex traffic environments and are frequently exposed as pedestrians (WHO, 2023). Recent global estimates indicate that approximately five hundreds children under the age of nineteen die each day due to RTIs, with over ninety percent of these fatalities occurring in developing countries; in South Asia alone, an estimated 171,468 child and adolescent deaths have been recognized to RTIs, accounting for 78 percent of the global burden, including 29,859 deaths reported in 2019 (UNICEF, 2025).

In Nepal, RTIs are a leading cause of mortality and disability. Official data from the Nepal Police (2022) indicate that in the fiscal year 2021/22, there were 2,883 fatalities and 7,282 severe injuries resulting from approximately 24,526 road accidents nationwide. However, estimates from the Asian Transport Observatory (2025) suggest a substantially higher fatality figure of approximately 8,479 deaths in 2021, highlighting significant underreporting and emphasizing the profound economic and social burden on affected families. Other studies show that urban and semi-urban areas like Butwal are experiencing increases in traffic-related trauma due to vehicle increase, insufficient road safety infrastructure and weak public health preparedness (Shrestha et al., 2017). While epidemiological data provide a broad understanding of the magnitude of RTIs, there remains a critical gap in knowledge

regarding the qualitative dimensions of the issue, particularly the lived experiences, symptom manifestations and health-seeking decision-making processes of injured children and their caregivers.

A critical aspect of trauma response lies in health-seeking behavior, understood as the sequence of remedial actions individuals undertake to address perceived ill health (Oberoi et al., 2016). Timely access to emergency care, especially during the "golden hour" is essential to survival and recovery (Shrestha et al., 2017). However, in many LMICs, structural weaknesses result in significant delays. In Ethiopia, only 27 percent of injured individuals arrived at hospitals within one hour, and only 22.6 percent used ambulances; in Nepal, ambulance utilization similarly hovers around 14.8 percent, with 85.2 percent of patients using private vehicles and a mean arrival time of 7.63 hours (Seid et al., 2015; Shrestha et al., 2017). Shockingly, only 0.7 percent receive any pre-hospital care (Shrestha et al., 2017), illustrating a severe gap in trauma systems.

These quantitative patterns underscore critical qualitative implications. Children injured in road traffic crashes often endure intense fear, confusion and physical pain, while their parents simultaneously experience heightened anxiety, helplessness, and psychological stress exacerbated by unfamiliar clinical settings and the pressure of urgent decision-making (Foster et al., 2017). Parental responses are shaped by multiple factors, including the severity of the child's injury, their own involvement in the incident, underlying mental health conditions, family dynamics and the procedural demands of the healthcare system (Foster et al., 2017). In resource-constrained countries like Nepal, access to formal mental health services remains limited and cultural humiliation frequently discourages families from seeking psychological support. Although some children may demonstrate a natural decline in post-traumatic symptoms within the first few months of the incident, structured psychological interventions are often essential to achieving full emotional recovery (Hiller et al., 2016). In such contexts, reliance on passive strategies such as "watchful waiting" may result in unresolved trauma and long-term psychological harm (Sharma et al., 2024).

Furthermore, a disconnect between police documentation and hospital admission records highlights persistent underreporting of injuries, suggesting that many individuals affected by RTIs never arrive the formal healthcare system (Mohammed et al., 2015). This issue is especially noticeable in Nepal's rural and semi-urban regions, where delays in seeking care are compounded by systemic barriers such as inadequately resourced emergency services, limited ambulance access and difficult geographic terrain factors that significantly hinder timely intervention and increase the risk of complications and preventable mortality. Despite growing recognition of the burden of RTIs, existing research has largely focused on epidemiological trends, health system readiness or adult trauma narratives with minimal exploration of children's lived experiences during acute hospitalization. To address this gap, the present study seeks to examine the injuries -seeking behaviors and hospitalization experiences and perception of school aged children who sustained critical injuries in RTAs within Butwal Sub-Metropolitan City. Thereby contributing valuable child centered insights to inform trauma care and support services in similar low resource settings.

Methods

This study employed a qualitative case study design to explore the experiences and perceptions by school aged children who sustained RTIs and their subsequent health-seeking behaviors. The case study method allowed for an in-depth understanding of lived experiences within a real world context, particularly in a setting with known limitations in emergency medical care. The study was conducted in Butwal Sub-Metropolitan City of Rupandehi District, which has experienced a growing burden of RTIs due to increased traffic congestion, poor road infrastructure and limited public health preparedness. The study population included school children who had experienced RTIs and their parents. The sample consisted of five injured children and their parents, selected based on official records maintained by the Area Police Office, Butwal, during the fiscal year 2078/2079.

Data were collected through in-depth, semi-structured interviews conducted in the participants' native language to ensure clarity, cultural appropriateness and participant comfort (Sharma & Devkota, 2024). Initial interviews with the injured students were conducted during their leisure time at school and subsequently at their homes on school leave days, depending on their availability and convenience.

Interviews with parents were conducted at their residences during preferred hours, primarily in the morning or evening, based on their expressed comfort and availability. Separate interview guides were developed for children and parents to explore their experiences with injury symptoms, decision-making in seeking care, transportation to health facilities and emotional responses during hospitalization. Confidentiality and privacy of all participants were ensured throughout the study by conducting interviews in private settings and anonymizing personal information during analysis and reporting. Data were analyzed thematically following the seven-step framework outlined by Flyvbjerg (2011), which involved transcription, coding, identification of key themes and interpretation of recurring patterns.

Results

Health-seeking behavior refers to the sequence of actions individuals take to address perceived ill-health including the time taken to seek care, type of healthcare provider consulted and adherence to treatment (Oberoi et al., 2016). Among school-level children injured in RTAs, this behavior can be influenced by factors such as awareness, accessibility, cultural beliefs and perceived severity. Timely treatment can significantly reduce road accident related mortality. Socioeconomic conditions, cultural perceptions and healthcare availability also shape the health-seeking patterns of trauma patients (Baffour-Awuah et al., 2018).During the treatment of children who had road accidents in Butwal Sub-Metropolitan city, their experiences and perceptions about being in the hospital are as follows:

Seeking Emergency Care within Government Hospital

The emergency care practice within government hospital, Lumbini Province Hospital, has been found to be inadequate in some cases. The emergency health service provides immediate medical treatment to an injured person and helps them for further treatment. Many lives could be saved from untimely death if emergency health care facilities are provided in time. Emergency health service facilities are arranged in every hospital to provide emergency health services. Such types of healthcare services are provided 24 hours a day. Doctors, nurses and staffs have been managed in the hospital for emergency health care. Since Lumbini Province Hospital is a government hospital notably situated in Butwal Sub-Metropolitan city, offers a comprehensive spectrum of specialized medical services, including emergency care. Due to its public status, the hospital incurs relatively lower treatment costs; thus attracting a high number of patients. The perception and experience of Case-I student regarding the emergency health services of this hospital is as follows.

I was admitted to the emergency ward of Lumbini Province Hospital within an hour of my accident. My leg was very painful and was panicking due to severe injuries. Only a few nurses and other staff in this unit. They did not take care of me and I kept on crying because the pain in my leg was increasing. Then the nurse came and gave me TT Vaccines and pain killer drugs were administered. Although the pain in my leg was decreased, my leg was still swelling. Along with me my parents requested the nurses to call the doctor for my investigation. But even after waiting for 4-5 *hours, the doctor did not come, so I had to go to a private hospital for treatment. I noticed that the nurses in this hospital spent a lot of time on their mobile phones doing personal activities rather than taking care of the patients. I was shocked to see the behavior of the emergency health service staff of this hospital.*

In this regard, Case-I's guardian opines:

There is a lack of good beds for treating patients in the hospital. My son and another patient were kept in the same bed. The hospital has a shortage of doctors. During our wait for 4-5 *hours, not a single doctor came. The inside of emergency department is not hygienic. We found the behavior of the staff unfriendly. A patient who does not have his own person working there should not go to this hospital.*

About the facilities and provisions available in the hospital, the Case-II student contradicts with the Case I student and his parents' experience. She expressed: "After the accident, the car driver took me to Lumbini Province Hospital, where I received quick treatment due to his connections. I got all services except a CT scan. Nurses and doctors were good." The opinion and experience of the Case-III student almost echoed with Case I student and his parents:

My initial treatment was in a private clinic. For further treatment, I was admitted to the emergency department of Lumbini Province Hospital. The nurses who were there cleaned my wound and gave me a pain killing vaccine. Later, the doctor advised me to have a CT scan. Since my parents

did not have the enough money for the treatment, we returned home using common pain relievers. After managing money we went to the hospital the next day. There was not so big issue in my CT scan report. Although it is a government hospital, we did not find any special facility for those who are financially weak like us.

The experiences of injured children and their parents highlighted the need for improvement in the emergency care practices within government hospitals. There might have been enough beds and doctors available to meet the demand, and the staff could be properly trained to provide quality care to patients. Additionally, special facilities might have been provided for those who are financially weak.

Seeking Treatment at Private Hospital

Many private hospitals in Butwal Sub-Metropolitan city were seen to provide better treatment and care than government hospitals. When government hospitals become overcrowded and it was found difficult to meet a specialist doctor. In such situation, patients, who are financially able, seek treatment in private hospitals. The perception and experience of the students who got medical treatment in a private hospital after a road accident is as follows. According to the Case-I student:

I waited for 4-5 *hours and since the doctor did not come to the government hospital, I went to the private hospital for treatment. Within* 5-10 *minutes of my arrival at the private hospital, the doctor started my treatment. He made the staff there to do an X-ray immediately. X-ray showed that my leg was completely broken. It was not possible to plaster immediately because the leg was swollen. As the advice given by them, I received treatment and got immediate health improvement. I found the behavior of the nurses and staff in the private hospital very good. If I could have been treated in private hospital from the beginning, I would have recovered faster. Although the private hospital costs a little more, the service of the doctor, the behavior of the staff and the cleanliness are much better than in the government hospital.*

In this regard, the parents of Case-V student seemed highly satisfied. The mother acknowledged:

After my son's road accident, the people at the accident site admitted him to a private hospital in Butwal-8, Sukkhanagar. When we reached the hospital within an hour of the road accident, all the first aid was given. After we reached the hospital, our son had a sever attack. Our son's life was saved due to the doctor's immediate treatment. When we stayed in the hospital, the treatment proceeding by the doctor and the nurse to the son was very good. Although the treatment was a bit expensive in private hospital, the site was very clean and tidy. I was very impressed by the behavior of the nurses towards the patients. My son and the nurses accommodated there like friends. They grew their very cordially as the nurses brought sweets to my son time to time and remained there making him laugh.

The reflections of injured children and their parents revealed a notable dissatisfaction with the quality of care provided in government hospitals, often citing issues such as inadequate resources, limited staff and outdated medical equipment. Conversely, private hospitals were perceived as offering superior care due to better infrastructure, shorter waiting times and more attentive service, despite their comparatively higher costs. Subsequently, more parents expressed a willingness to pay extra for improved treatment. However, due to the affordability of government services and the availability of national health insurance coverage, a significant proportion of the population still initially seeks care from government hospitals. This pattern reflects a complex interplay between perceived quality of care, economic constraints and systemic limitations. Similar findings were observed in a study conducted in Saudi Arabia, where preferences for private healthcare were associated with better access, appointment availability and insurance utilization (Gosadi & Jareebi, 2025). These insights underline the need to improve service delivery in government healthcare settings in Nepal, especially by addressing structural barriers that influence health-seeking behavior.

Discussion

The findings of this study reveal significant disparities in emergency care experiences among school children injured in RTAs in Butwal Sub-Metropolitan City. A recurring theme was the suboptimal quality of emergency services in government hospitals, especially Lumbini Province Hospital, where issues such as long waiting times, inattentive staff, inadequate infrastructure and lack of prompt medical attention were frequently reported. This aligns with previous research suggesting that the quality of

emergency care in many public hospitals in low-resource settings is often inadequate due to poor staffing, overcrowding and inefficient systems (Goniewicz et al., 2017; Mohammed et al., 2015).

The case narratives reveal that children often faced emotional and physical distress due to delays in receiving timely medical care. As seen in Case-I and Case-III, injured children waited for several hours before being attended to, and in some instances, no doctors were available. Similar findings were reported by Shrestha et al. (2017), who noted that only 27percent of RTA victims in Nepal arrived at hospitals within the "golden hour," and that pre-hospital care was nearly nonexistent, with a mere 0.7 percent of patients receiving any first aid prior to hospital arrival. This delay can significantly worsen injury outcomes, especially in cases involving head trauma or internal injuries.

Contrasting experiences were observed among children who received treatment in private hospitals. These institutions were consistently praised for their prompt service, cleanliness, availability of doctors and sympathetic care by medical staff. The contrast between public and private healthcare institutions reflects broader systemic challenges in Nepal's public health infrastructure which lacks adequate funding, personnel and emergency preparedness (Hiller et al., 2016). Parents' willingness to bear higher costs for better care further highlights the value they place on timely and respectful treatment, even in resource-constrained households.

Furthermore, inequity in access to quality healthcare was evident. In the case of the student who received prompt attention at Lumbini Province Hospital due to the driver's personal connections, it became clear that social capital plays a role in navigating the healthcare system a phenomenon also noted in other low and middle income countries (Seid et al., 2015). These disparities raise ethical concerns around equitable access to care and suggest a need for systemic reforms to reduce healthcare discrimination based on personal networks or financial ability.

The findings also reflect a lack of trauma knowledgeable care and child sensitive approaches in hospital settings. Children described feeling neglected, scared and unsupported during their hospital stay, particularly in the government hospital setting. These experiences may contribute to long term psychological effects such as posttraumatic stress disorder (PTSD), which is common among child trauma survivors and may go untreated in the absence of formal mental health support (Hiller et al., 2016). In this context, improving emergency care should include not only medical readiness but also psychosocial support mechanisms for young trauma victims.

This study underscores the urgent need to strengthen emergency medical systems in Nepal, particularly by improving staffing levels, ensuring the availability of essential equipment, and training healthcare professionals in pediatric trauma care. Equally important is the development of pre hospital care infrastructure, including ambulance services and first responder training as emphasized by Kassebaum et al. (2017) and Shrestha et al. (2017). Moreover, enhancing hospital accountability, patient-centered care and access for vulnerable populations could significantly reduce preventable morbidity and mortality from RTAs.

Limitations of the Study

This study has several limitations that should be acknowledged. First, the small sample size comprising five injured school children and their parents limits the generalizability of the findings to other regions or populations. The study was geographically confined to Butwal Sub-Metropolitan City, and therefore, the experiences and perceptions captured may not reflect those of children in other urban or rural areas of Nepal. Additionally, the qualitative case study design, while allowing for rich and detailed narratives, may have introduced subjectivity during data interpretation and lacks the broader statistical reliability of quantitative research. There is also the possibility of recall bias, as participants may have had difficulty remembering details of the accident or their hospital experiences, particularly if some time had passed since the event. Social desirability bias may have influenced participants especially children and their parents to provide responses they perceived as acceptable or favorable. Moreover, the study focused mainly on the acute phase of hospitalization and did not explore long-term recovery or follow-up care, which are essential aspects of the post injury experience. Finally, the perspectives of key stakeholders such as emergency medical technicians, hospital administrators and ambulance service providers were not included, limiting the scope of systemic analysis. Despite these

limitations, it is hoped that the study provides valuable insights into the health-seeking behaviors and hospital experiences of school children injured in road traffic accidents.

Conclusion

This study provides valuable insights into the health-seeking experiences and perceptions of school children injured in road traffic accidents (RTAs) in Butwal Sub-Metropolitan City. The findings reveal critical shortcomings in emergency care services at government hospitals, such as delayed treatment, unresponsive staff and lack of child-friendly environments which contrast sharply with the more efficient and compassionate care reported in private hospitals. Socioeconomic disparities and the influence of personal networks further complicate access to timely and equitable healthcare. These results highlight the urgent need for systemic improvements in trauma care, particularly for vulnerable pediatric populations, to ensure timely, quality and sympathetic medical responses following RTAs.

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